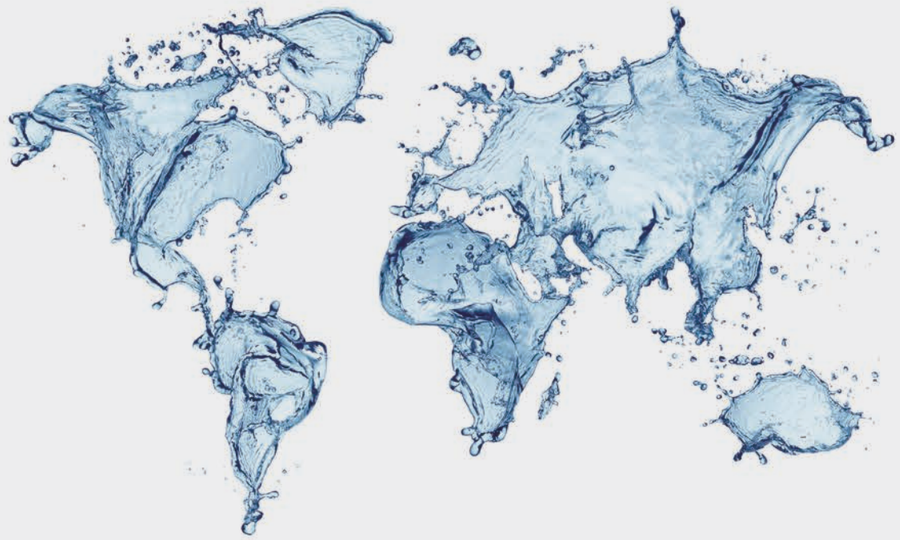
Lanry

Professional Manufacturer of Flowmeters



- Transit-time Ultrasonic Flowmeter
- Doppler Ultrasonic Flowmeter
- Partially Filled Pipe & Open Channel Flowmeter

Lanry Instruments (Shanghai) Co ., Ltd

Shanghai Add: 6 Floor, Block F, Bldg 5, No.2800 Jiuxin Rd., Songjiang District,201612, China
Dalian Add: No.2-3 Zhenpeng East Rd., Economic and Technological Development Zone, Dalian 116600, China
Tel: 86 21-67618991,67801665
Fax: 86 21-67801625
Website: www.lanry-flow.com
E-mail : info@lanry-flow.com

SPECIALIZED IN FLOWMETER MORE THAN 20 YEARS

COMPANY

Lanry Instruments is the professional manufacturer of flow measure instruments, provides one package service of research and development, production, marketing and after-sales services. Engaged in the production of flow meters more than 20 years, Lanry has been equipped with advanced design capabilities and piled up a wealth of field application experience, which lays a solid foundation for the commitment to the promotion and innovation of high-tech system solution. The corporation has devoted to the production of flow measurement instruments with superior performance, high stability and strong reliability. Currently, Lanry Instruments has developed into two branches as Lanry Instruments (Shanghai) Co., Ltd. and Lanry instruments (Dalian) Co., Ltd, which are responsible for different areas and applications.

Adhering to the "high-quality, high efficiency" business principles, Lanry instruments takes quality as its life. Sticking to the "integrity, innovation, win-win" development principles, we do sincere business and sets sights on technology innovation. Therefore, it is believed that with the top-class product quality, first-class business management and first-ranking customer service, the corporation is supposed to cooperate sincerely, develop mutually and then create brilliance together with domestic and foreign customers!

FACTORY PICTURES & CERTIFICATES

Contents

General:

TF1100 Transit–time Ultrasonic Flowmeter works on the transit–time method.

The clamp–on ultrasonic transducers (sensors) are mounted on the external surface of the pipe for non–invasive and non–intrusive flow measurement of liquid in fully filled pipe. Two pairs of transducers are sufficient to cover the most common pipe diameter ranges. In addition, its optional thermal energy measurement capability makes it possible to carry out a complete analysis of thermal energy usage in any facility.

The Insertion ultrasonic transducers (sensors) is hot–tapped mounting, there is no ultrasonic compound and coupling problem; Even though the transducers are inserted into pipe wall, they do not intrude into the flow, thus, do not generate disturbance or pressure drop to the flow. The insertion (wetted) type has the advantage of long–term stability and better accuracy.

This flexible and easy to use flow meter is the ideal tool for the support of service and maintenance activities. It can also be used for the control or even for the temporary replacement of permanently installed meters.

Applications:

General

- Service and maintenance
- Replacement of defective devices
- Support of commissioning process and installation
- Performance and efficiency measurement
  – Evaluation and assessments
  – Capacity measurement of pumps
  – Monitoring of regulating valves
- Energy efficiency audits

Water and waste water industry – hot water, cooling water, potable water, sea water, etc

Petrochemical industry

Chemical industry –chlorine, alcohol, acids, thermal oils, etc

Refrigeration and air conditioning systems

Food, beverage and pharmaceutical industry

Power supply– nuclear power plants, thermal & hydro–power plants, heat energy boiler feed water, etc

Metallurgy & mining applications

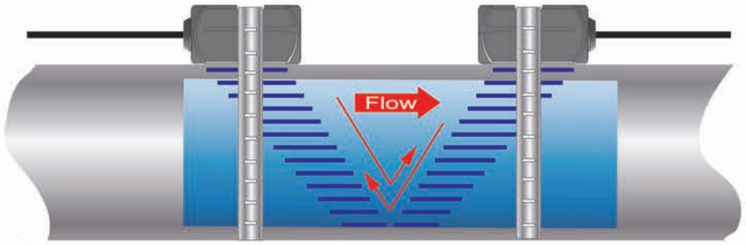
Mechanical engineering and plant engineering– pipeline leak detection, inspection, tracking and collection.

Water & Waste Water | HVAC | Building | Petrochemical Industry | Metallurgy & Mining

Principle of Measurement:

The Transit Time Difference Correlation Principle makes use of the fact that the time–of–flight of an ultrasonic signal is affected by the flow velocity of the carrier medium. Like a swimmer working his way across a flowing river, an ultra–sonic signal travels slower upstream than downstream.

Our TF1100 ultrasonic flow meters work according to this transit–time principle:



$$V_f = Kdt / TL$$

Where:

V_f:Flow velocity

K:Constant

dt:Difference in time of flight

TL:Average Transit Time

When the flow meter works, the two transducers transmits and receives ultrasonic signals amplified by multi beam which travels firstly downstream and then upstream. Because ultra sound travels faster downstream than upstream, there will be a difference of time of flight (dt). When the flow is still, the time difference (dt) is zero. Therefore, as long as we know the time of flight both downstream and upstream, we can work out the time difference, and then the flow velocity (Vf) via the following formula.

Application Pictures:



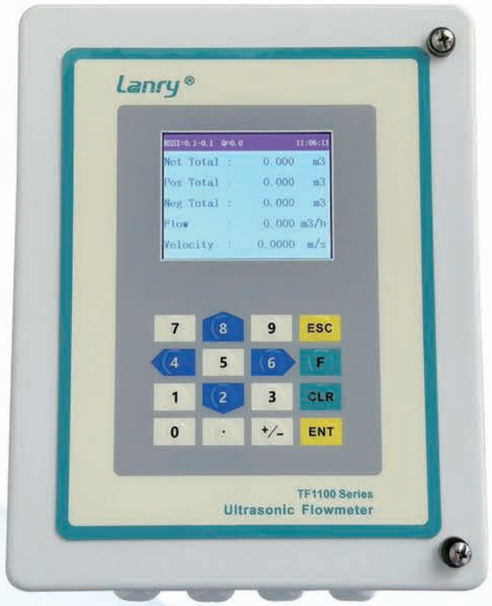









Wall-mounted Transit-Time Ultrasonic Flowmeter TF1100-EC



Features:

- Non-invasive transducers are easy to install, cost effective, and require no pipe cutting or processing interrupt.
- Wide liquid temperature range: -35℃~200℃.
- Data logger function.
- Thermal energy measurement capability can be optional.
- For commonly used pipe materials and diameters from 20mm to 5000mm.
- Wide bi-directional flow range of 0.01 m/s to 12 m/s.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s;±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 24V/500mA
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	Fiberglass
Display	3.5" color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4-20mA, OCT, Relay,RS232, RS485 (Modbus), Datalogger, NB-IoT, GPRS
Size	244*196*114mm
Weight	2.4kg

Transducer:

Degree of protection	IP65 according to EN60529.(IP67 or IP68 Upon request)
Suited Liquid Temperature	-35℃~200℃
Pipe diameter range	20-50mm for type B, 40-5000mm for type A
Transducer Size	Type B 40(h)*24(w)*22(d)mm Type A 56(h)*31(w)*28(d)mm
Material of transducer	Aluminum + Peek
Cable Length	Std:10m
Temperature Sensor	Pt1000 clamp-on Accuracy: ±0.1%

Configuration Code:

TF1100-EC	**Wall-mounted Transit-time Clamp-on Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
	D	24VDC
	S	65W Solar supply
		Output Selection 1
		N N/A
		1 4-20mA (accuracy 0.1%)
		2 OCT
		3 Relay Output (Totalizer or Alarm)
		4 RS232 Output
		5 RS485 Output (ModBus-RTU Protocol)
		6 Data storage function
		7 GPRS
		Output Selection 2
		Same as above
		Output Selection 3
		Transducer Type
		B DN20–50 –35~200℃
		A DN40–5000 –35~200℃
		Temperature Input Sensor
		N None
		T Clamp-on PT1000
		Pipeline Diameter
		DNX e.g.DN20—20mm, DN6000—6000mm
		Cable length
		10m 10m (standard 10m)
		Xm Common cable Max 300m(standard 10m)
		XmH High temp. cable Max 300m

TF1100-EC —A — 1 — 2 — 3 /LTC— B — N — DN100 —10m (example configuration)

Description:

Power supply: 85–265VAC; Output: 4–20mA, OCT & Relay; transducer type: A for DN40–5000 –35~200℃; without PT1000 temperature sensor; DN100 application; 10m transducer cables.

Features:

- Hot–tapped installation, no pipe line flow interrupted.
- No moving parts, no pressure drop, no maintenance.
- Spool–piece transducer for best accuracy and better long–term stability.
- High temp. Insertion transducers are suitable for high temperature of –35℃~150℃.
- Wide bi–directional Flow range of 0.01 to 12m/s, and wide range of pipe sizes from DN65 to DN6000.
- Data logger function.
- The heat measurement function by configuring with paired temperature sensors.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s; ±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 24V/500mA
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	Fiberglass
Display	3.5'' color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	Unit GJ，KWh can be optional
Communication	4-20mA, OCT, Relay, RS232, RS485(Modbus), Datalogger, NB-IoT, GPRS
Size	244*196*114mm
Weight	2.4kg

Transducer:

Degree of protection	IP67 or IP68 according to EN60529
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ High Temp.: -35℃~150℃
Pipe diameter range	DN65-6000
Transducer Size	Type S Φ58*199mm
Material of transducer	SUS304 (Std. Temp.); SUS304+Peek (High Temp.)
Cable Length	Std: 10m
Temperature Sensor	PT1000 insertion or clamp-on Accuracy: ±0.1%

Configuration Code:

TF1100-EI	**Wall-mounted Transit-time Insertion Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
	D	24VDC
	S	65W Solar supply
	Output Selection 1	
	N	N/A
	1	4-20mA (accuracy 0.1%)
	2	OCT
	3	Relay Output (Totalizer or Alarm)
	4	RS232 Output
	5	RS485 Output (ModBus-RTU Protocol)
	6	Data storage function
	7	GPRS
	Output Selection 2	
		Same as above
	Output Selection 3	
	Transducer Type	
	S	Standard Insertion for pipe DN65-DN6000
	Transducer Temperature	
	S	-35～85℃
	H	-35～150℃
	Temperature Input Sensor	
	N	None
	T	PT1000
	Pipeline Diameter	
	DNXX	e.g.DN65—65mm, DN1400—1400mm
	Cable length	
	10m	10m (standard 10m)
	Xm	Common cable Max 300m(standard 10m)
	XmH	High temp. cable Max 300m

TF1100-EI –A – 1 – 2 – 3 /LTI— S — S – N – DN100 – 10m (example configuration)

Description:
Power supply: 85-265VAC; output: 4-20mA, OCT & Relay; transducer type: standard insertion transducer for DN65-6000; transducer temperature:-35 ~ 85℃;without PT1000 temperature sensor; DN100 application; 10m transducer cables.

Features:

- 14 hours battery (rechargeable), back-lit 4 lines display.
- Data logger function.
- Can be used for mobile measurement, flow rate calibration, data comparing, meters running status checking.
- Non-invasive transducers.
- Wide bi-directional flow range of 0.01 m/s to 12 m/s. Wide liquid temperature range: -35℃~200℃.
- Works reliably in both clean and somewhat dirty liquids with turbidity<10000ppm.
- Lightweight and easily transportable in box.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s;±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V Up to 14 hours with fully charged internal batteries
Enclosure type	Handheld
Degree of protection	IP65 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	ABS
Display	4 line×16 English letters LCD graphic display, backlit
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Communication	RS232 ,Data Logger
Security	Keypad lockout, system lockout
Size	212*100*36mm case:410X320X80mm
Weight	0.5kg

Transducer:

Degree of protection	IP65 according to EN60529.(IP67 or IP68 Upon request)
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ High Temp.: -35℃~200℃
Pipe diameter range	DN20-50 for type S and B, DN40-5000 for type M and A
Transducer Size	Type S 48(h)*28(w)*28(d)mm Type M 60(h)*34(w)*32(d)mm Type B 40(h)*24(w)*22(d)mm Type A 46(h)*31(w)*28(d)mm
Material of transducer	Aluminum (standard temperature); Peek (high temperature)
Cable Length	Std: 5m

Configuration Code:

TF1100-CH	**Handheld Transit-time Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
		Output Selection 1
		N N/A
		2 RS232 Output
		3 Data storage function
		Output Selection 2
		Same as above
		Transducer Type
		S DN20-50 –35~85℃
		M DN40-5000 –35~85℃
		B DN20-50 –35~200℃
		A DN40-5000 –35~200℃
		Transducer Rail
		N None
		RS DN20-50
		RM DN40-600 (For larger pipe size, pls contact us.)
		Pipeline Diameter
		DNX e.g.DN50—50mm, DN4500—4500mm
		Cable length
		5m 5m (standard 5m)
		Xm Common cable Max 300m(standard 5m)
		XmH High temp. cable Max 300m

TF1100-CH –A –2 /LTCH –M –N –DN100 –5m (example configuration)

Description:

Power supply: 85-265VAC; output: RS232; transducer type: M for DN40-5000 –35~85℃ without transducer rails; without PT1000 temperature sensor; DN100 application; 5m transducer cables.

Features:

- 50 hours rechargeable battery, multi-line color LCD display.
- Data logger function.
- The heat measurement function by configuring with paired temperature sensors.
- Non-invasive transducers.
- Wide bi-directional flow range of 0.01 m/s to 12 m/s. Wide liquid temperature range: –35℃~200℃.
- Works reliably in both clean and somewhat dirty liquids with turbidity<10000ppm.
- Lightweight and easily transportable in box.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 12 m/s, bi-directional
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	±1.0% of reading at rates >0.3 m/s;±0.003 m/s of reading at rates<0.3 m/s
Response time	0.5s
Sensitivity	0.003m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V Up to 50 hours with fully charged internal batteries
Enclosure type	Portable
Degree of protection	IP66
Operating temperature	-20℃ to +60℃
Housing material	ABS
Display	4.3" color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4~20mA,OCT, RS232, RS485 (Modbus),Data Logger, GPRS
Size	270X215X175mm
Weight	3kg

Transducer:

Degree of protection	IP65 according to EN60529.(IP67 or IP68 Upon request)
Suited Liquid Temperature	-35℃~200℃
Pipe diameter range	20−50mm for type B, 40−5000mm for type A
Transducer Size	Type B 40(h)*24(w)*22(d)mm Type A 46(h)*31(w)*28(d)mm
Material of transducer	Aluminum + Peek
Cable Length	Std: 5m
Temperature Sensor	PT1000 clamp-on Accuracy: ±0.1%

Configuration Code:

TF1100-EP	**Portable Transit-time Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
	Output Selection 1	
	N	N/A
	1	4-20mA (accuracy 0.1%)
	2	OCT
	3	RS232 Output
	4	RS485 Output (ModBus-RTU Protocol)
	5	Data storage function
	6	GPRS
	Output Selection 2	
		Same as above
	Output Selection 3	
	Transducer Type	
	B	DN20-50 -35~200℃
	A	DN40–5000 –35~200℃
	Temperature Input Sensor	
	N	None
	T	Clamp-on PT1000(DN20-1000) (0～200℃)
	Pipeline Diameter	
	DNX	e.g.DN20—20mm, DN5000–5000mm
	Cable length	
	5m	5m (standard 5m)
	Xm	Common cable Max 300m(standard 5m)
	XmH	High temp. cable Max 300m

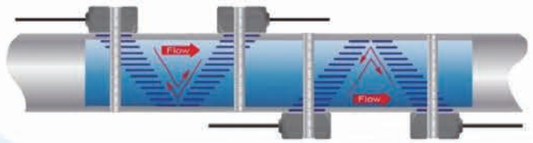
TF1100–EP –A –1 –2 –5 / LTP –A –N – DN100 – 5m (example configuration)

Description:

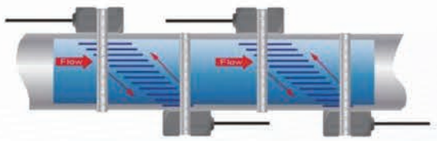
Power supply: 85–265VAC; output: 4–20mA, OCT & Data storage function; transducer type: A for DN40–5000 –35~200℃;
Without PT1000 temperature sensor; DN100 application; 5m transducer cables.

Principle of measurement:

The TF1100 transit time flow meter utilizes two pairs transducers that function as ultrasonic transmitters and receivers. The transducers are installed on the outside of a closed pipe at a specific distance from each other. The transducers can be mounted in V–method where the sound transverses the pipe twice, or W–method (rarely used) where the sound transverses the pipe four times, or in Z–method where the transducers are mounted on opposite sides of the pipe and the sound crosses the pipe once. This selection of the mounting method depends on pipe and liquid characteristics. The flow meter operates by alternately transmitting and receiving a frequency modulated burst of sound energy between the two pairs transducers and measuring the transit time that it takes for sound to travel between the two pairs transducers. The differ–ence between the transit–time is directly and exactly related to the velocity of the liquid in the pipe.



V Method



Z Method

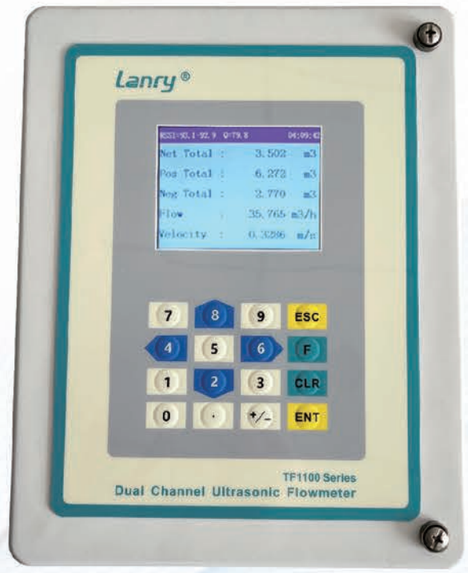
$$Vf = Kdt / TL$$

Where:

Vf: Liquid velocity
K: Constant
dt: Difference in time of flight
TL: Average Transit Time

Applications:

- Water, sewage (with low particle content) and sea water, water supply and drainage water.
- Process liquids; Liquors.
- Milk, yoghourt milk.
- Gasoline kerosene diesel oil.
- Power supply.
- The flow patrolling and examining.
- Metallurgy, Laboratory.
- Energy–conservation, economize on water.
- Food and medicine.
- Heat measures, Heat balance.
- On–the–spot check–up, standard, the data are judged, Pipeline leak detection.



Features:

- Dual channels ultrasonic transit–time sensor for high accuracy 0.5%.
- Easy to install, cost effective, and require no pipe cutting or processing interrupt.
- Wide liquid temperature range: –35℃~200℃.
- Data logger function.
- Thermal energy measurement capability can be optional.
- For commonly used pipe materials and diameters from 20mm to 5m.
- Wide bi–directional flow range of 0.01m/s to 15 m/s.
- User–friendly configuration.
- With the ability of dynamic zero.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 15 m/s, bi-directional
Resolution	0.1mm/s
Repeatability	0.15% of reading
Accuracy	± 0.5%R
Response time	0.5s
Sensitivity	0.001m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 12–24V
Enclosure type	Wall–mounted
Degree of protection	IP66 according to EN60529
Operating temperature	–10℃ to + 60℃
Housing material	Fiberglass
Display	3.5'' color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4-20mA, OCT, Relay, RS485(Modbus), Datalogger, GPRS, NB-IoT
Size	244*196*114mm
Weight	2.4kg

Transducer:

Degree of protection	Standard IP65; IP67, IP68 can be optional
Suited Liquid Temperature	-35℃~200℃
Pipe diameter range	20–50mm for type B; 40–5000mm for type A
Transducer Size	Type B 40(h)*24(w)*22(d)mm Type A 46(h)*31(w)*28(d)mm
Material of transducer	Aluminum + Peek
Cable Length	Std:5m
Temperature Sensor	PT1000 clamp-on Accuracy: ±0.1%

Configuration Code:

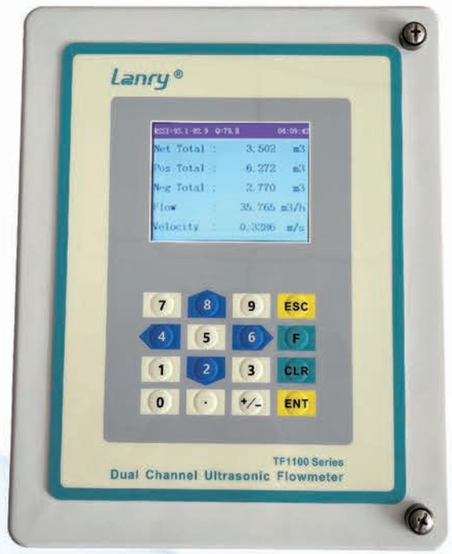
TF1100–DC	**Wall–mounted Dual Channels Clamp On Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
	D	24VDC
	S	Solar supply
	Output Selection 1	
	N	N/A
	1	4-20mA (accuracy 0.1%)
	2	OCT
	3	Relay Output (Totalizer or Alarm)
	4	RS232 Output
	5	RS485 Output (ModBus-RTU Protocol)
	6	Data storage function
	7	GPRS
	Output Selection 2	
		Same as above
	Output Selection 3	
	Transducer Type	
	B	DN20–50 –35~200℃
	A	DN40–5000 –35~200℃
	2B	DN20–50 –35~200℃, two pairs of sensors
	2A	DN40–5000 –35~200℃, two pairs of sensors
	Temperature Input Sensor	
	N	None
	T	Clamp-on PT1000(DN20-1000) (0～200℃)
	Pipeline Diameter	
	DNX	e.g.DN20—20mm, DN5000–5000mm
	Cable length	
	10m	10m (standard 10m)
	Xm	Common cable Max 300m (standard 10m)
	XmH	High temperature. cable Max 300m

TF1100–DC – A – 1 – 2 – 3 /LTDC – 2A – N –DN100 –10m (example configuration)

Description:

Power supply: 85–265VAC; output: 4–20mA, OCT, Relay output; transducer type: 2A for DN40–5000 –35~200℃; without PT1000 temperature sensor; DN100 application; 10m transducer cables.

Insertion Dual-Channel Ultrasonic Flowmeter TF1100-DI



Features:

- Hot-tapped installation, no pipe line flow interrupted.
- No moving parts, no pressure drop, no maintenance.
- The accuracy is ±0.5% for dual channels insertion ultrasonic flowmeter.
- A wide range of flow measurement, high flow rate can reach 15m/s.
- High-temperature transducer is suitable to liquids of -35℃ ~ 150℃.
- Wide bi-directional flow range of 0.01 to 15m/s, and wide range of pipe sizes from DN65-6000.
- Data logger function.
- The heat measurement function by configuring with paired temperature sensors.
- With the ability of dynamic zero.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 15 m/s, bi-directional
Resolution	0.1mm/s
Repeatability	0.15% of reading
Accuracy	± 0.5%R
Response time	0.5s
Sensitivity	0.001m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 12-24V
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-10℃ to + 60℃
Housing material	Fiberglass
Display	3.5" color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4-20mA, OCT, Relay, RS485(Modbus), Datalogger, GPRS, NB-IoT
Size	244*196*114mm
Weight	2.4kg

Transducer:

Transducers Type	Insertion
Degree of protection	IP65. IP67 or IP68 according to EN60529
Suited Liquid Temperature	-35~150℃
Pipe diameter range	S for 65mm-6000mm
Transducer Size	ϕ58*199mm
Material of transducer	SUS304 + Peek
Cable Length	Std: 10m

Configuration Code:

TF1100-DI	**Dual Channels Insertion Type Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
	D	24VDC
	S	Solar supply
		Output Selection 1
		N N/A
		1 4-20mA (accuracy 0.1%)
		2 OCT
		3 Relay Output (Totalizer or Alarm)
		4 RS232 Output
		5 RS485 Output (ModBus-RTU Protocol)
		6 Data storage function
		7 GPRS
		Output Selection 2
		Same as above
		Output Selection 3
		Transducer Type
		S DN65-6000 -35~150℃
		2S DN65-6000 -35~150℃, two pairs of sensors
		Temperature Input Sensor
		N None
		T PT1000
		Pipeline Diameter
		DNX e.g.DN20—20mm, DN5000-5000mm
		Cable length
		10m 10m (standard 10m)
		Xm Common cable Max 300m (standard 10m)
		XmH High temperature. cable Max 300m

TF1100-DI – A – 1 – 2 – 3 / LTDI – 2S –N – DN100 – 10m (example configuration)

Description:

Power supply: 85-265VAC; output: 4-20mA, OCT, Relay output;

transducer type: 2S for DN65-6000 -35~150℃; without PT1000 temperature sensors; DN100 application; 10m transducer cables.

Features:

- 50-hour battery (rechargeable), color multi-line display.
- Data logger function.
- The heat measurement function by configuring with paired temperature sensors.
- Non-invasive transducers.
- Wide bi-directional flow range of 0.01 m/s to 15 m/s. Wide liquid temperature range: -35℃~200℃.
- Works reliably in both clean and somewhat dirty liquids with turbidity<10000ppm.
- Lightweight and easily transportable in box.
- The accuracy is ±0.5%.
- With the ability of dynamic zero.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 15 m/s, bi-directional
Resolution	0.1mm/s
Repeatability	0.15% of reading
Accuracy	± 0.5%R
Response time	0.5s
Sensitivity	0.001m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 12–24V
Enclosure type	Portable
Degree of protection	IP66 according to EN60529
Operating temperature	–10℃ to + 60℃
Housing material	ABS
Display	4.3" color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Thermal energy	unit GJ，KWh can be optional
Communication	4-20mA, OCT, RS485(Modbus), Datalogger, GPRS
Size	270*215*175mm
Weight	2.4kg

Transducer:

Degree of protection	Standard IP65; IP67, IP68 can be optional
Suited Liquid Temperature	-35℃~200℃
Pipe diameter range	20–50mm for type B; 40–5000mm for type A
Transducer Size	Type B 40(h)*24(w)*22(d)mm Type A 46(h)*31(w)*28(d)mm
Material of transducer	Aluminum + Peek
Cable Length	Std: 5m
Temperature Sensor	PT1000 clamp-on Accuracy: ±0.1%

Configuration Code:

TF1100–DP	**Portable Dual Channels Clamp On Ultrasonic Flowmeter**	
	Power supply	
	A	85–265VAC
		Output Selection 1
		N N/A
		1 4-20mA (accuracy 0.1%)
		2 OCT
		3 RS232 Output
		4 RS485 Output (ModBus-RTU Protocol)
		5 Data storage function
		6 GPRS
		Output Selection 2
		Same as above
		Output Selection 3
		Transducer Type
		B DN20–50 –35~200℃
		A DN40–5000 –35~200℃
		2B DN20–50 –35~200℃, two pairs of sensors
		2A DN40–5000 –35~200℃, two pairs of sensors
		Temperature Input Sensor
		N None
		T Clamp-on PT1000(DN20-1000) (0～200℃)
		Pipeline Diameter
		DNX e.g.DN20—20mm, DN5000–5000mm
		Cable length
		5m 5m (standard 5m)
		Xm Common cable Max 300m (standard 5m)
		XmH High temperature. cable Max 300m

TF1100–DP – A – 1 – 2 – 3 / LTDP – 2A –N – DN100 – 5m (example configuration)

Description:

Power supply: 85–265VAC; output: 4–20mA, OCT, Relay output;

transducer type: 2A for DN40–5000 –35~200℃; without PT1000 temperature sensors; DN100 application; 5m transducer cables.

Multi-Channel Transit Time Ultrasonic Flowmeter TF1100-MI

Specifications:

Measurement principle	Ultrasonic transit-time difference correlation principle
Channel number	2 or 4 channels
Flow velocity range	0.01 to 12 m/s, bi-directional
Accuracy	± 0.5% of reading
Repeatability	0.15% of reading
Resolution	0.25mm/s
Pipe size	DN100-DN2000
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Installation	Transmitter: wall-mounted ; sensors: insertion
Power Supply	DC3.6V(disposable lithium batteries) ⩾ 10 years
Operating temperature	-20℃ to +60℃
Display	9-bit LCD display
Output	Pulse, RS485 modbus, NB-IoT/4G/GPRS/GSM
Data Storage	Can storage the 10 years data as year, month and day
Measure cycle	500ms
IP class	Transmitter:IP65; sensors:IP68
Material	Transmitter: Aluminum; sensors: stainless steel
Temperature	Standard sensor:-35℃~85℃; high tempterature:-35℃~150℃
Size	Transmitter: 170*162*84mm; sensors: Φ58*199mm
Weight	Transmitter: 1.3kg; sensors: 2kg/pair
Cable length	Standard 10m

Configuration Code:

TF1100-MI	**Multi-Channel Transit Time Ultrasonic Flowmeter**	
	Channel number	
	D	Two channels
	F	Four channels
	Output Selection 1	
	N	N/A
	1	Pulse
	2	RS485 Output (Modbus-RTU Protocol)
	3	NB-IoT
	4	GPRS
	Output Selection 2	
	Same as above	
	Sensor Channels	
	DS	Two channels (4 pcs sensors)
	FS	Four channels (8 pcs sensors)
	Sensor Type	
	S	Standard
	L	Lengthening sensor
	Transducer Temperature	
	S	-35 ~ 85 ℃
	H	-35 ~ 150 ℃
	Pipeline Diameter	
	DNX	e.g. DN10-100mm, DN2000-2000mm
	Cable Length	
	10m	10m (standard 10m)
	Xm	Common cable Max 300m
	XmH	High temp. cable Max 300m

TF1100-MI – D – 1 –N –N / LTM-FS – S – S – DN300 –10m (example configuration)

(Description: multi-channel wall-mounted ultrasonic flowmeter, channel number: 4 channels; output: pulse; sensor channel: 4 channels; sensor type: standard sensor; transducer temperature: -35 ~85 ℃; pipeline diameter: DN100, cable length:10m)

Doppler Ultrasonic Flowmeter

General:

The DF6100 Doppler ultrasonic flow meter is designed to measure volumetric flow of solids–bearing or aerated liquid within closed conduit, the pipe line must be full of liquids, and there must be a certain amount of air bubbles or suspended solids in liquid.

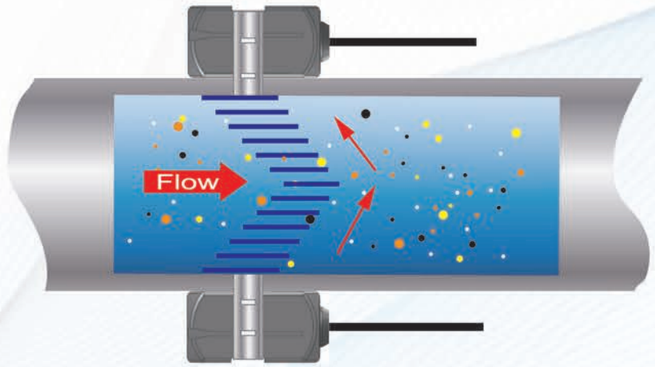
Transducers are clamp–on(DF6100–EC/EP) or hot–tapped insertion(DF6100–EI) types, user don´t need to shut down the pipe flow when install transducers.

The Doppler ultrasonic flow meter can display flow rate and flow totalizer, etc., and is configured with 4–20mA, Relays, OCT outputs.

Applications:

- Raw sewage
- Activated sludge
- Ground water
- Pulp and paper slurries
- Chemical slurries
- Drainage
- Mining recirculation

Principle of Measurement:



The flowmeter operates by transmitting an ultrasonic sound from its transmitting transducer, the sound will be reflected by useful sonic reflectors suspended within the liquid and recorded by the receiving transducer. If the sonic reflectors are moving within the sound transmission path, sound waves will be reflected at a frequency shifted (Doppler frequency) from the transmitted frequency. The shift in frequency will be directly related to the speed of the moving particle or bubble. This shift in frequency is interpreted by the instrument and converted to various user defined measuring units.

There must be some particles large enough to cause longitudinal reflection – particles larger than 100 micron.

When install the transducers, the installation location must have enough straight pipe length upstream and downstream. Commonly, the upstream needs 10D and downstream needs 5D straight pipe length, where D is pipe diameter.

Features:

- It is suitable for pipe sizes ranging from 40 to 4000mm.
- For dirty liquids, a certain amount of air bubbles or suspended solids shall be contained.
- Excellent low flow rate measurement ability, low to 0.05m/s.
- A wide range of flow measurement, high flow rate can reach 12m/s.
- High-temperature transducer is suitable to liquids of -35℃ ~ 200℃.
- Do not need to shut down the pipe flow when installing the transducers.
- User-friendly configuration.
- 4-20mA, Relay and OCT outputs.
- Accuracy: 2.0% calibrated span.

Specifications:

Transmitter:

Measurement principle	Doppler ultrasonic
Resolution	0.25mm/s
Repeatability	0.5% of reading
Accuracy	0.5% -- 2.0% F.S.
Response time	2-60s for optional
Flow Velocity Range	0.05- 12 m/s
Liquid Types Supported	Liquids containing 100ppm of reflectors and at least 20% of the reflectors are larger than 100 micron.
Power Supply	AC: 85-265V DC: 24V/500mA
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	Fiberglass
Measurement Channels	1
Display	2 line × 8 characters LCD, 8-digit rate or 8-digit total (resettable)
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Communication	4-20mA,Relay and OCT output
keypad	4pcs buttons
Size	244(h)*196(w)*114(d)mm
Weight	2.4kg

Transducer:

Transducers Type	Clamp-on
Degree of protection	IP65. IP67 or IP68 according to EN60529
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ High Temp.: -35℃~200℃
Pipe diameter range	40-4000 mm
Transducer Size	60(h)*34(w)*32(d)mm
Material of transducer	Aluminum (standard temperature); Peek (high temperature)
Cable Length	Std: 10m

Configuration Code:

DF6100-EC	**Wall-mounted Doppler Clamp-on Ultrasonic Flowmeter**		
	Power supply		
	A	85–265VAC	
	D	24VDC	
	S	65W Solar supply	
		Output Selection 1	
		N	N/A
		1	4-20mA
		2	Relay
		3	OCT
			Output Selection 2
			Same as above
			Sersor Type
			D Standard Clamp-on transducer (DN40-4000)
			Transducer Temperature
			S -35～85℃
			H -35～200℃
			Pipeline Diameter
			DNX e.g.DN40—40mm, DN4000—4000mm
			Cable length
			10m 10m (standard 10m)
			Xm Common cable Max 300m(standard 10m)
			XmH High temp. cable Max 300m

DF6100-EC —A — 1 — N /LDC— D — S — DN100 — 10m (example configuration)

Description:
Power supply: 220VAC; output: 4-20mA; transducer type: standard for DN40-4000;transducer temperature: -35～85℃;
DN100 application; 10m transducer cables.

Features:

- Do not need to shut down the pipe flow when installing the transducers.
- It is suitable for pipe sizes ranging from 65 to 4000mm.
- For dirty liquids, a certain amount of air bubbles or suspended solids shall be contained.
- Excellent low flow rate measurement ability, low to 0.05m/s.
- A wide range of flow measurement, high flow rate can reach 12m/s.
- High–temperature transducer is suitable to liquids of –35℃ ~ 150℃.
- User–friendly configuration.
- 4–20mA, Relay and OCT outputs.
- Accuracy: 2.0% calibrated span.

Specifications:

Transmitter:

Measurement principle	Doppler ultrasonic
Resolution	0.25mm/s
Repeatability	0.2% of reading
Accuracy	0.5% -- 2.0% F.S.
Response time	2-60s for optional
Flow Velocity Range	0.05- 12 m/s
Liquid Types Supported	Liquids containing 100ppm of reflectors and at least 20% of the reflectors are larger than 100 micron.
Power Supply	AC: 85-265V DC: 24V/500mA
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	Fiberglass
Measurement Channels	1
Display	2 line × 8 characters LCD, 8-digit rate or 8-digit total (resettable)
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft³, barrels, lbs, liters, m³,kg
Communication	4-20mA,Relay and OCT output
keypad	4pcs buttons
Size	244(h)*196(w)*114(d)mm
Weight	2.4kg

Transducer:

Transducers Type	Insertion
Degree of protection	IP67 or IP68 according to EN60529
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ High Temp.: -35℃~150℃
Pipe diameter range	65-4000 mm
Transducer Size	Φ58*199mm
Transducer material	SUS304 (Std. Temp.) ; SUS304 + Peek (High Temp.)
Cable Length	Std: 10m

Configuration Code:

DF6100-EI	**Insersion Doppler Ultrasonic Flowmeter**	
	Power supply	
	A	85–265VAC
	D	24VDC
	S	65W Solar supply
	Output Selection 1	
	N	N/A
	1	4-20mA
	2	Relay
	3	OCT
	Output Selection 2	
		Same as above
	Sersor Type	
	D	Standard Insertion Transducer (DN65-4000)
	Transducer Temperature	
	S	-35～85℃
	H	-35～150℃
	Pipeline Diameter	
	DNX	e.g.DN65—65mm, DN1000—1000mm
	Cable length	
	10m	10m (standard 10m)
	Xm	Common cable Max 300m(standard 10m)
	XmH	High temp. cable Max 300m

DF6100-EI —A — 1 — N /LDI— D — S — DN100 — 10m (example configuration)

Description:
Power supply: 110VAC; output: 4-20mA; transducer type: standard insertion transducer for DN65-4000;transducer temperature: -35～85℃; DN100 application; 10m transducer cables.

Portable Doppler Ultrasonic Flowmeter DF6100-EP

Features:

- Rechargeable battery can work up to 50 hours.
- It is suitable for pipe sizes ranging from 40 to 4000mm.
- For dirty liquids, a certain amount of air bubbles or suspended solids shall be contained.
- Excellent low flow rate measurement ability, low to 0.05m/s.
- A wide range of flow measurement, high flow rate can reach 12m/s.
- High-temperature transducer is suitable to liquids of -35℃ ~ 200℃.
- Do not need to shut down the pipe flow when installing the transducers.
- User-friendly configuration.
- 4-20mA, OCT outputs.

Specifications:

Transmitter:

Measurement principle	Doppler ultrasonic
Resolution	0.25mm/s
Repeatability	0.5% of reading
Accuracy	0.5% -- 2.0% F.S.
Response time	2-60s for optional
Flow Velocity Range	0.05- 12 m/s
Liquid Types Supported	Liquids containing 100ppm of reflectors and at least 20% of the reflectors are larger than 100 micron.
Power Supply	AC: 85-265V Up to 50 hours with fully charged internal batteries
Enclosure type	Portable
Degree of protection	IP65 according to EN60529
Operating temperature	-20℃ to +60℃
Housing material	ABS
Measurement Channels	1
Display	2 line × 8 characters LCD, 8-digit rate or 8-digit total (resettable)
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft^3, barrels, lbs, liters, m^3,kg
Communication	4-20mA, OCT output
keypad	6pcs buttons
Size	270X125X175mm
Weight	3kg

Transducer:

Transducers Type	Clamp-on
Degree of protection	IP65. IP67 or IP68 according to EN60529
Suited Liquid Temperature	Std. Temp.: -35℃~85℃ High Temp.: -35℃~200℃
Pipe diameter range	40-4000 mm
Transducer Size	60(h)*34(w)*32(d)mm
Material of transducer	Aluminum (standard temperature); Peek (high temperature)
Cable Length	Std: 5m

Configuration Code:

DF6100-EP	**Portable Doppler Ultrasonic Flowmeter**	
	Power supply	
	A	85-265VAC
		Output Selection 1
		N N/A
		1 4-20mA
		2 OCT
		Output Selection 2
		Same as above
		Sersor Type
		D Standard Clamp-on transducer (DN40-4000)
		Transducer Temperature
		S -35～85℃
		H -35～200℃
		Pipeline Diameter
		DNX e.g.DN40—40mm, DN4000—4000mm
		Cable length
		5m 5m (standard 5m)
		Xm Common cable Max 300m(standard 5m)
		XmH High temp. cable Max 300m

DF6100-EP — A — 1 — N /LDP— D — S — DN600 — 5m (example configuration)

Description:
Power supply: 85-265VAC; output: 4-20mA; transducer type: standard for DN40-4000;transducer temperature: -35 ~ 85℃; DN600 application; 5m transducer cables.

General:

The DOF6000 series flowmeter consists of Flow calculator and the Ultraflow QSD 6537 Sensor.

The Ultraflow QSD 6537 Sensor is used to measure water velocity, depth, and conductivity of water flowing in rivers, streams, open channels and pipes. When used with a companion Lanry DOF6000 Calculator, flow rate and total flow can also be calculated.

The flow calculator can calculate the cross–sectional area of partially filled pipe,open channel stream or river,for stream or river, with up to 20 coordinate points describing the river' s shape of cross section. It' s suitable for various applications.

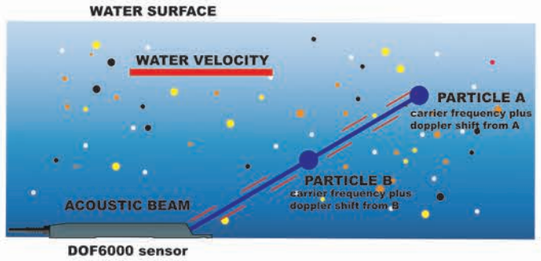
DOF6000–W (Wall–mounted type)

DOF6000–P (Portable type)

Features:

- 20 coordinate points to describe the river´ s shape of cross section.
- One instrument can measure the velocity, depth,conductivity and temperature simultaneously.
- Velocity range : 0.02mm/s to 12m/s bidirectional, accuracy is 1%.
- Depth range: 0 to 10m.
- Measure velocity in both forward flow and back flow.
- Depth is measured by both the pressure sensor and ultrasonic level sensor principles.
- With barometric pressure compensation function.
- IP68 Epoxy–sealed body design, designed for under water installation.
- Separate sensor is with RS485 modbus/SDI–12 output to connect computer dircetly.

Principle of Measurement:



Application:

- Partially filled pipes
- Culvert
- Channel
- River and stream
- Water treatment
- Sewage treatment
- Irrigation
- Industrial waste
- Environmental monitoring

Specification:

Calculator:

Type	Wall–mounted and Portable can be optional
Power supply	Calculator: 85–265VAC; 12–24VDC (only for wall mounted type)
IP class	Calculator: IP66
Operating temperature	0℃~60℃
Case material	Fiberglass (wall-mounted) ; ABS (portable)
Display	4.3'' color LCD
Output	Pulse, 4–20mA(Flow&Depth), RS485/Modbus, Daatalogger, GPRS
Size	244×196×114mm(wall-mounted); 270×215×175mm(portable)
Weight	2.4kg (wall-mounted); 3kg (portable)
Data logger	16GB
Application	Partially Filled Pipe: 150–6000mm; Channel: width > 200mm

Sensor:

Velocity	Range	20mm/sec to 12m/sec Bidirectional velocity capability, set using configuration tools
	Accuracy	± 1%R
	Resolution	1mm/s
Depth (Ultrasonic)	Range	20mm – 5000mm (5m)
	Accuracy	± 1mm
	Resolution	1mm
Depth (Pressure)	Range	0mm to 10000mm (10m)
	Accuracy	± 2mm
	Resolution	1 mm
Temperature	Range	0℃ – 60℃
	Accuracy	± 0.5℃
	Resolution	0.1℃
Electrical Conductivity (EC)	Range	0 to 200,000 µS/cm, Typically ± 1% of measurement
	Accuracy	± 1%R
	Resolution	± 1 µS/cm
	recorded as a 16–bit value (0 to 65,535 µS/cm) or a 32–bit value (0 to 262,143 µS/cm)	
Tilt (accelerometer)	Range	± 70° in roll and pitch axes.
	Accuracy	± 1° for angles less than 45°
Output	SDI–12	SDI–12 v1.3, Max. cable 50m
	RS485	Modbus RTU, Max. cable 500m
Environmental	Operating temperature	0℃ ~+60℃ water temperature
	Storage temperature	–20℃ ~+60℃
	IP class	IP68
Others	Cable	The standard cable is 15m, the maximum option is 500m.
	Sensor material	Epoxy–sealed body, Marine Grade 316 Stainless Steel Mounting Bracket
	Sensor size	135mm x 50mm x 20mm (L x W x H)
	Sensor weight	1kg with 15m of cable

Configuration Code:

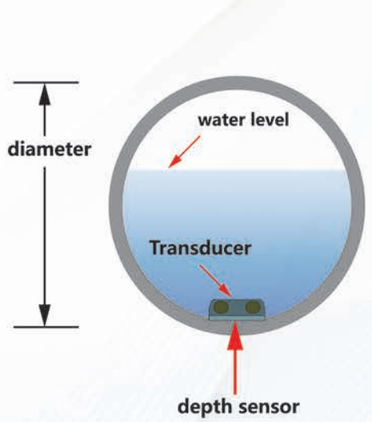
DOF6000	**Doppler Open Channel Flowmeter**		
	Calculator		
	W	Wall-mounted	
	P	Portable	
		Power supply	
		A	85-265VAC
		E	24VDC (only for Wall-mounted Calculator)
			Output
			N None
			C 4-20mA
			P Pulse
			F RS485 (Modbus)
			D Data logger
			G GPRS
			Level range
			6537 0 to 10m
			Sensor cable length
			15m 15m (standard)
			XXm more length, please contact us.

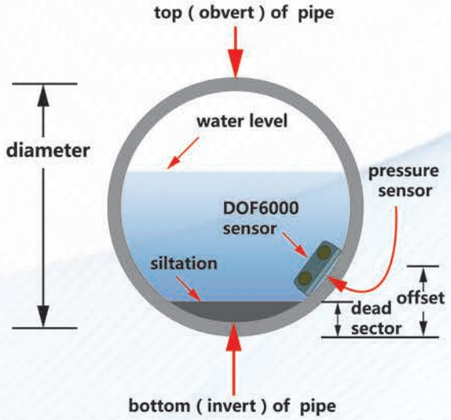
DOF6000 – W – A – N / VL –6537 –15m (example configuration)

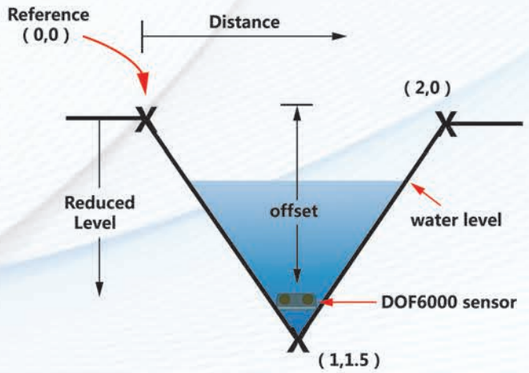
Description:

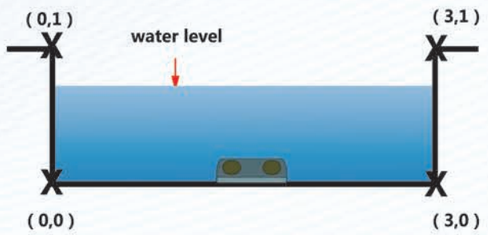
Wall mounted Doppler Open Channel Flowmeter; Power supply: 85–265VAC; output:none; Sensor level range: 0–10m; 15m sensor cables.

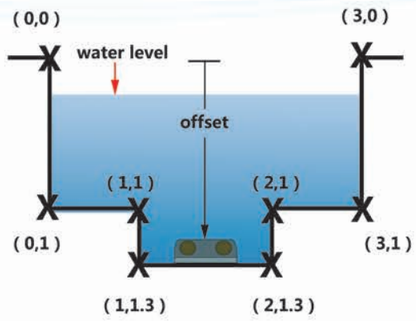
DOF6000 Sensor Installation Details:

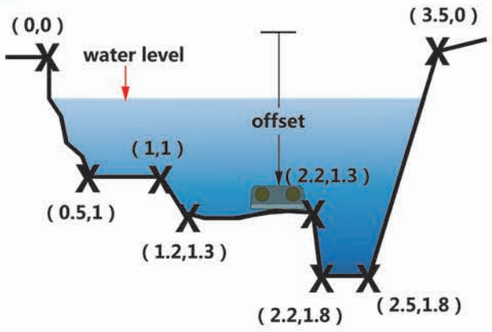




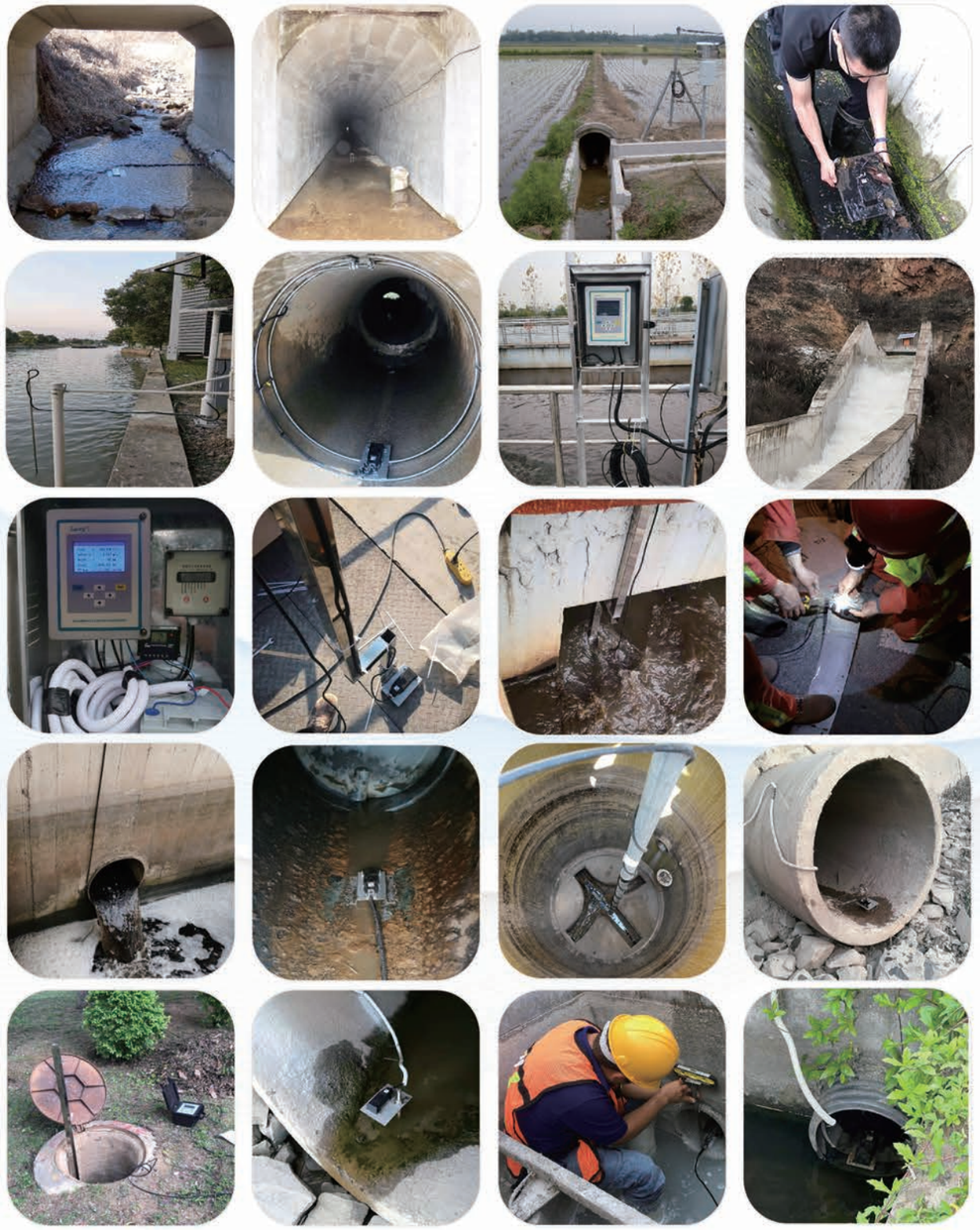








Application Pictures:



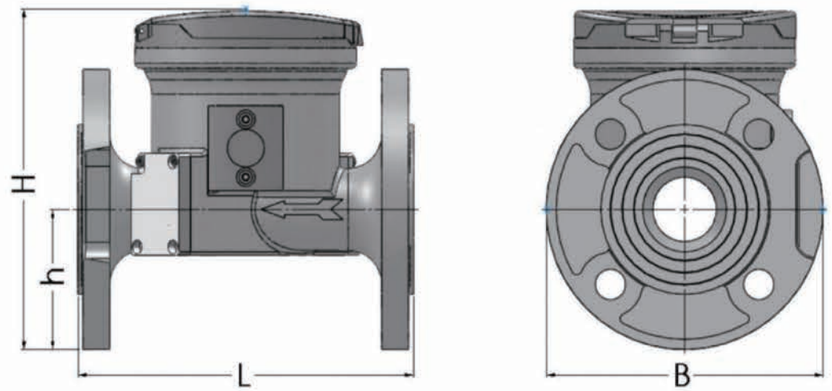
Features:

- Above 15 years shelf life battery.
- With stainless steel (SUS304) body.
- IP 68 design, longtime under water working.
- No moving parts. Excellent long–term stability and reliability.
- With a best–in–class turndown ratio as high as Q3:Q1=500:1.
- Can measure and storage both forward flow and backflow.
- Double channels ultrasonic transit–time sensor.
- Active leak, theft, backflow, damage, flow rate & battery life indication.
- Output: RS485, M–bus, Lora, NB–IoT,4–20mA, Pulse and GPRS
- Accuracy: 2.0% calibrated span.

Specifications:

Type	Ultrawater							
Flow rate m3/h	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300
Q4	50	50	80	125	313	500	1250	1250
Q3	40	40	63	100	250	400	1000	1000
Q2	0.128	0.128	0.2	0.32	0.8	1.28	3.2	3.2
Q1	0.08	0.08	0.125	0.5	0.5	0.8	2	2
R=Q3:Q1	500 : 1							
Max. Working Pressure	1.6Mpa							
Pressure Loss	△P16							
Temperature Class	T50							
Work Environment	Temperature: –25℃~55'℃, Humidity: s100%(RH)							
Electromagnetic Compatibility	E2							
Display	9–bit LCD display. Can display totailazer, instant flow, error alarm, flow direction, output							
Data Storage	Can storge the 10 years data, year, month and day							
Output	Modbus,4–20mA, Pulse,(default 2ml/pulse); Lora, NB–IoT							
Power supply	DC3.6V(disposible lithium batteries)⩾15 years							
Pipe Range	DN50–300							
IP Grade	IP68							
Accuracy Class	Class 1							
Process Connection	Flange							

Technical Parameter:



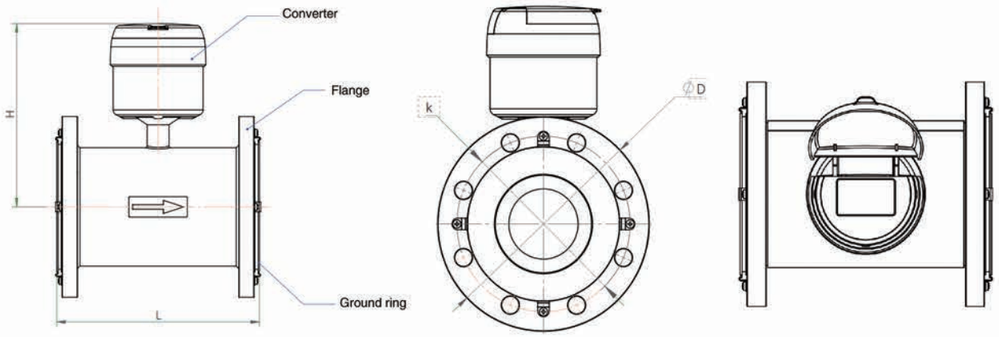
Dimension:

Types	Ultrawater							
Nominal	50	65	80	100	150	200	250	300
Diameter	2	2 1/2	3	4	6	8	10	12
L– pipe length (mm)	200	200	225	250	300	350	449	499
B – width (mm)	165	185	200	220	285	340	406	489
H – height (mm)	194	210	210	223	282	332	383	456
h – height (mm)	40	90	90	103	140	165	203	245
Weight (kg)	9	11.2	13	15	32	45	68	96

Features:

- Flow measurement for conductive water.
- With stainless steel (SUS304) body.
- Built–in 3.6V lithium battery, the battery can work for 8 years continuously.
- DN40–200 pipes are available.
- IP68 design, longtime under water working.
- The turndown ratio (Q3:Q1) as R160, R250 and R400 for your optional.
- Can measure and storage both forward flow and backflow.
- No moving parts, excellent long–term stability amd reliability.
- RS485 Modbus, NB–IoT, LoRaWAN, GPRS outputs for your optional.

Dimension:



Technical Parameter:

Pipe Size	Overall Size (unit:mm)			Performance		Flow Range (m^3/h)	
	L	D	H	Q3:Q1	Q3 (m^3/h)	Error (± 5%)	Error (± 2%)
40mm	200	150	195	R400	25	0.064 ~ 0.1	0.1 ~ 31.25
50mm	200	165	200	R400	40	0.1 ~ 0.16	0.16 ~ 50
65mm	200	185	205	R400	64	0.16 ~ 0.25	0.25 ~ 80
80mm	200	200	210	R400	100	0.25 ~ 0.4	0.4 ~ 125
100mm	250	220	220	R400	160	0.4 ~ 0.64	0.64 ~ 200
125mm	250	250	230	R250	250	1 ~ 1.6	1.6 ~ 312.5
150mm	300	285	250	R250	400	1.6 ~ 2.56	2.56 ~ 500
200mm	350	340	275	R160	640	4 ~ 6.4	6.4 ~ 800

Application:

Clamp-on Small Pipe Ultrasonic Flowmeter TF1100-CC

Features:

- High accuracy as 2.0%.
- Clamp–on installation: no process interruption required.
- No moving parts, excellent long–term stability and reliability.
- Suitable for DN6 – DN100 (OD 9 – 115) pipeline sizes.
- 4–20mA, OCT, Relay and RS485 Modbus outputs for your selection.
- Flow velocity covers a wide range of 0.1 m/s to 5.0 m/s.
- Optional for thermal energy measurement capability.
- Capable of storing day/month/year historical data for 10 years.

Specification:

Pipe size	DN6–DN100 (OD9–OD115)
Accuracy	± 2.0% (± 0.5m/s ~ 5.0m/s)
Flow velocity range	0.1m/s ~ 5m/s
Repeatability	0.8%
Response time	500ms
Analog output	4–20mA; Max. load: 600Ω
Alarm output	OCT output: alarm value; Total pulse (option)
Communication	RS485 (Support Modbus communication protocol)
Power supply	24VDC @3W
Cable length	Standard: 2m, extend up to 20m
Keypad	4 light touch buttons
Display	1.3'' OLED 128*64 display; Refresh rate: 3.3Hz. (180 degree rotation for easy reading)
Units	Metric and imperial units are available, Cubic Meters (m^3), Liters(L), USA Gallons (Gal), / hour, /min. default unit setting: m^3/h
Totalizer	7–bit digit
Historical data	Day/month/year totalizer, data can be saved for 10 years without loss
Liquid	Water, seawater, oil, chemical, ...
Pipe material	Stainless steel, carbon steel, copper, plastic, ...
Case material	Aluminum alloy
Environment temp.	–10 ℃ ~ 50 ℃
Liquid temp.	–10 ℃ ~ 50 ℃
Environment humidity	0–95% relative humidity, without condensation
Viscosity	< 300 CST (mm^2/s)
Protection class	IP54/IP65

Application:



Lanry | Professional Manufacturer Of Flow Meters